

ARM Manus Research Station

Site Visit 0508M Report

Visit Duration: 19 August to 27 August 2005

Manus Island, Papua New Guinea

## SV-0508M

<b>Site:</b>	<b>Proposed Dates on Site:</b> 19 - 27 August 2005
<b>Team Members:</b> Gary Eckert Krzysztof Krzton Chris Bull	<b>Ship or hand carry prior to SV:</b> Cal equipment, GPS, SG plugs  <b>Safety:</b> Major Hazards: Caustic chemicals (KOH), Explosive gas (H2), AC electricity  Hazard Controls: BOM Electrolyser Handbook, BM Electrolyzer Operations/Maintenance Training, ASNZS 4836/2001-Safe Working on LV Electrical Installations, 2-man rule  <b>Reminder:</b> When replacing items (e.g., desiccant, filters, etc.), record and report the quantity of spares left on site.

### Site Tasks

Priority	System	Date Completed (dd/Month)	Service Time in Hours	Tasks/Assoc Hazards-Controls For each priority item insert new line(row) for each date/time entry
1	ES&H			Provide safety orientation to Taddy Baras - Gary
		26-Aug-05		Taddy Baras not here
2	HOGEN			Repair electrolyser - Gary/Chris
		21/22Aug05		Compressor motor not turning. Missing one phase. Traced fault to faulty circuit breaker in distribution panel. Will swap circuit breaker tomorrow.
		23-Aug-05		The unused circuit breaker in the distribution box that we were going to use to replace the faulty circuit breaker with also has a fault. We will attempt to obtain a circuit breaker in town.
		24-Aug-05		Installed new circuit breaker - electrolyser operational.
		25-Aug-05		New Fault - Replaced control board, tightened diode connections. Adjusted idle current. Electrolyser serviceable.
3	HOGEN			Commission - Krzysztof
		21/22Aug05		Replaced some gas plumbing.
		21/22Aug05		Installed surge protection modification kit.
		21/22Aug05		Installed new dryer.
		21/22Aug05		Installed water stack modification kit.
		21/22Aug05		Replaced exterior light components - however there is no lamp.
		21/22Aug05		Replaced water treatment plant(WTP) filters - WTP commissioning in progress
		23-Aug-05		Software update carried out.
		23-Aug-05		Located lamp for exterior light - installed and working.
		23-Aug-05		Exterior fluoro light found to be half full of water - casing is damaged. Whole unit needs to be replaced.

		23-Aug-05		Dug out ground for installation of pit where hogen hydrogen pipe is to join existing pipe running to RBL from electrolyser.
		23-Aug-05		Checked and calibrated gas sensors.
		24-Aug-05		Installed pit, connected hogen to rbl/electrolyser pipe.
		24-Aug-05		Installed flyscreen over ventilation openings and blocked other holes to prevent wasps from entering. Removed wasp nests from inside hogen and container.
		24-Aug-05		Leak tested hogen gas plumbing; adjusted flow rate to rbl; hogen operational. Temporary water recycling hose installed from hogen back to water tank.
		25-Aug-05		Labelling completed, helium cylinders installed, spares sorted and catalogued. Cleaned up
		25-Aug-05		Repaired water leak in pit.(RBL sprinkler water pipe runs thru pit)
		26-Aug-05		Helium regulator replaced
4	HOGEN			Train Observers on HOGEN operation - Krzysztof
		25-Aug-05		James and Hymson trained. Instructions laminated and placed with Hogen. Trial balloon launch carried out.
		26-Aug-05		Krystof went through operating procedures with Hymson again.
5	TSI			Troubleshoot and resolve water problems in camera housing
		21/22Aug05		Inspected camera housing. The o-ring between the camera and the housing needs replacing. The o-ring I brought is too large. Rubber tape and electrical tape applied externally to cover joint between housing and camera.
		21/22Aug05		Camera has colour balance and image quality problems - results in reporting 100% cloud cover at all times. Will look at camera board and see if adjustments are possible.
		23-Aug-05		Checked camers after major rain event - no sign of water internally. Cleaned filter, lens and sensor - no improvement to image quality.
6	GENSET			Routine maintenance - Hstings Deering
		25-Aug-05		No Hastings-Deering personnel visited site.
7	ES&H			Change out U-Van eye wash bottle/solution
		25-Aug-05		Unable to locate 2nd bottle of concentrate.
8	ES&H			Change out balloon barn eye wash bottle/solution
		25-Aug-05		Done
9	OTHER			Change out battery, internal, in Gas Analyzer - BOM
		26-Aug-05		Could not locate spare batteries - current battery appears to be in good condition.
10	BBSS			Change out Velcro strap sonde retainer - BOM
		26-Aug-05		Done - no spare velcro straps left
11	IRT			Change out SKYRAD IRT Gold Mirror
		24-Aug-05		SKYRAD IRT gold mirror changed.
12	MMCR			Investigate sensitivity problem
		23-Aug-05		TWTA indicating Helix overcurrent and filament undervoltage faults.
		24-Aug-05		The word from Rex is that the TWTA is unserviceable and a new one is on the way.
13	MMCR			Change out antenna heater filters
		24-Aug-05		Antenna heater filters replaced. 12+ filters remaining.

14	MMCR			Change out TWTA desiccant
		24-Aug-05		TWTA unserviceable - awaiting replacement
15	COMM			Change out SAT Phone batteries or check for battery condition on phone when unplugged from E-Van battery bank
		26-Aug-05		There are no batteries in the sat phone, they were removed a year or so ago and replaced by the DC/DC converter and fed from the E Van 28 volt battery supply
16	OTHER			Install ventilation fans on Dell PCs
		24-Aug-05		???
17	SHIPPING			List items to be shipped following visit:
				2 x IRT gold mirrors.
				Helium regulator
				Fluro light ballast.
18	FUTURE NEEDS			List items needed for future visits (spares, etc.)
		23-Aug-05		New electrical distribution board for electrolyser/hogen. Circuit breakers and the frame and box are corroded. The electrolyser circuit breaker has failed, as has the unused three phase circuit breaker.
		23-Aug-05		Fluro light assy for hogen - exterior above control panel.
		23-Aug-05		Spare swagelock fittings and water pipe fittings for hogen
		24-Aug-05		Framed flyscreens for ventilation openings.
		24-Aug-05		2 IRT gold mirrors remaining
		24-Aug-05		Lid for hogen pit
		24-Aug-05		Right-angle fittings for hogen water supply/recycle pipes - cannot entrench pipes without them.
		25-Aug-05		Eye-wash concentrate
		26-Aug-05		Velcro straps for RBL
		26-Aug-05		Batteries for gas analyser
19	OTHER			
		25-Aug-05		Installed new fax machine
		24-Aug-05		Site air compressor repaired.
		26-Aug-05		GPS reading at skyrad stand. S02.06141 deg, E147.42528 deg, datum WGS84, GPSR accuracy reading 7 metres (Garmin Etrex Legend GPSR), @ 0030UTC, 26Aug05.
		26-Aug-05		Hymson reported that 3 air-conditioners are not working properly; O-van AC2 and I-van AC1 both have flashing "Unit On" lights (light should be steady); and one of the Y-van AC's is not cooling properly. No time left to investigate. Switched I-van AC1 off and switched spare AC on.